AIR-CONDITIONING
& REFRIGERATION
INSTITUTE

Representing Manufacturers
of Heating, Ventilating,
Air-Conditioning and
Refrigeration Products

November 2, 2004

Mr. Michael Martin
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Re: Docket No. 04-AAER-1

Dear Mr. Martin:

The Air-Conditioning and Refrigeration Institute (ARI) submits these written comments on the California Energy Resources Conservation and Development Commission (CEC) proposed amendments to the appliance efficiency regulations Title 20.

ARI is a North American trade association representing the manufacturers of over 90% of U.S. produced air conditioning and commercial refrigeration equipment. ARI represents a domestic industry of approximately 200 air conditioning and refrigeration companies, employing approximately 150,000 men and women in the United States. The total value of member shipments by these companies is over $30 billion annually. We have reviewed the proposed "45-Day Language" of the appliance efficiency regulations and would like to make the following comments.

Very Large Packaged Air-Cooled Commercial A/C (240-760 kBtu/h)

ARI does not support the two-tiered efficiency standards proposed by the commission and instead support a 10 EER (9.8 EER for equipment with a gas heating element) minimum standard effective January 1, 2010 for the following reasons:

1. The economic analysis used to justify the efficiency levels is flawed in many respects. The incremental cost of the equipment has been severely underestimated, and so has the discount rate. The cost estimated by the CEC contractor has been extrapolated from a cost analysis done by the Department of Energy (DOE) on much smaller packaged air conditioners. It is well known that cost figures cannot be extrapolated and are not a linear function of the cooling capacity. To ARI's knowledge, the only cost analysis ever conducted on this type of equipment size was done by ASHRAE 90.1. According to ASHRAE, the incremental cost at 10 EER was estimated at $2,724, which is over 5 times the cost estimated by the CEC contractor. Regarding the discount rate, ARI believes that the 3% used by CEC is unrealistically low and recommends that CEC look at the analysis conducted by DOE for the commercial air conditioning rulemaking. DOE has estimated the discount rate at 6.1%.

2. The proposed effective date of 2006 does not allow sufficient time for manufacturers to redesign their products and retool their production lines. Nor would it be technically and financially feasible for manufacturers to redesign products and retool production lines twice in 6 years (first in 2006 and then in 2010). Given that the HVAC industry will go through significant product redesign due to the phase-out of R-22 in 2010, a logical effective date for any new standards should be January 1, 2010, and nothing sooner.

3. A 0.2 EER deduction should be allocated for equipment with a heating element other than electric resistance. The 0.2 EER deduction is necessary to account for additional losses (pressure drops) resulting from the gas heating element. This deduction in EER has been used by ASHRAE 90.1 since at least 1989. In addition, it is also used by the CEC in its Title 20 regulations for water-cooled and evaporatively cooled products and in Title 24 for all air-cooled products above 65,000 btu/h (including products above 240,000 btu/h). We urge CEC to be consistent with its own regulations and to adopt the 0.2 EER deduction for products above 240,000 btu/h as well.

Residential Air Conditioners and Heat Pumps

Table C-2 of Section 1605.1 is inconsistent with the Department of Energy (DOE) final rule as published in the January 22, 2001[1] and August 17, 2004[2] issues of the Federal Register. The Table should make reference to the minimum efficiency standards for through-the-wall and space constrained products. In addition, on October 14, 2004, DOE's Office of Hearings and Appeals (OHA) announced that the Application for Exception filed by manufacturers of Small Duct High Velocity Systems (SDHV) seeking exception relief from the 13 SEER/7.7 HSPF minimum federal energy efficiency standard has been granted. Effective January 23, 2006, SDHV systems would be required to meet a minimum efficiency standard of 11 SEER/6.8 HSPF.

Commercial Refrigerators/Freezers

ARI has concerns with many provisions of the proposed amendments pertaining to commercial refrigeration products as follows:

Cabinets Without Doors

The proposed standard for cabinets without doors is totally arbitrary and is technically invalid. How could CEC technically justify an efficiency standard at the same level as reach-in cabinets with transparent doors, when the system without door is inherently less efficient? In addition, how could CEC promulgate minimum efficiency standard at a level that cannot be met by the products currently available on the market (there are no products at these levels in the CEC database). By proposing these minimum energy efficiency standards, CEC

[1] 66 FR, No.14, Page 7170
[2] 69 FR, No. 158, Page 50997

is in fact attempting to ban the sale of commercial refrigerator/freezer without doors in California. This is against the Warren-Alquist Act which requires CEC to demonstrate that the proposed standards are cost-effective, feasible, and attainable.

ARI recommends that energy standards for this category be delayed while maintaining the listing requirement until such time that sufficient data is available to set appropriate standards.

Pull Down Cabinets

The CEC proposed standards lumps all types of reach-in cabinets together without taking into account that some beverage merchandisers are designed for rapid pull down temperatures. These beverage merchandisers have oversized compressors and as such are not as efficient. We ask that CEC sets a separate product class for beverage merchandisers specifically designed for pull down temperature applications as follows:

Refrigerators with transparent doors:	0.126V + 3.51 kWh/day
Freezers with transparent doors:	0.788V + 4.30 kWh/day

In addition, equipment for pull down should be defined as those that can cool a cabinet by at least 4.3 degrees F/hour over a 12 hour period.

Refrigerator-Freezers Reach-in Cabinets

The January 1, 2007 proposed energy efficiency formula of 0.27AV – 0.71 kWh/day results in negative energy usage for adjusted volumes less than 2.63 cubic feet. We recommend that Table A7 be modified to allow for the greater of 0.27AV - 0.71 kWh/day or 0.70 kWh/day

In addition, the definition of Refrigerator-Freezer as written does not include units designed with two independent refrigeration systems. We recommend changing the wording in the definition to read "... has one or more sources of refrigeration requiring an energy input." For units with independent systems, we urge the CEC to adopt the maximum daily consumption that would be equal to the sum of both the applicable (transparent or solid door) refrigerator and freezer standards.

Ice Cream Cabinets

It is not clear to us why CEC is proposing minimum efficiency standards for ice cream cabinets with solid doors but opted not to regulate ice cream cabinets with transparent doors. This decision to regulate one class of product and not the other could have a negative impact on the sale of ice cream cabinet with solid doors in California. We recommend the CEC sets standards for both solid and transparent doors ice cream cabinets.

Low Temperature Freezers

ARI strongly recommends that an additional category of “Low Temperature Freezers” be added to the standard and defined as a freezer that operates at –20^{o}F and below. Energy standards should not be imposed at this time until sufficient data is collected to establish appropriate energy levels.

T8 Fluorescent Lighting in Freezers

ARI urges CEC to eliminate the requirement for T8 fluorescent lighting in freezers to allow manufacturers the flexibility in meeting the system efficiency requirement in the most cost effective manner. ARI believes that the role of CEC should be limited to setting performance standards only and not prescriptive standards.

Test Procedures

Regarding the test procedures, we would like to bring to the attention of the CEC that ARI standard 1200 provides for the rating and testing of closed and open refrigerators and freezers. ARI 1200 makes reference to ASHRAE 72 and 117 for the test procedures of open and closed commercial refrigerators/freezers respectively. We urge CEC to adopt ARI 1200 as the test procedures for all commercial refrigerators and freezers.

Commercial Icemakers

A quick look at the ARI directory of commercial icemakers shows that the proposed standards would eliminate a substantial amount of products listed. In some product categories and sizes, the impact of the proposed standards is much severe, with only a handful of models qualifying. More specifically, ARI would like to raise the following concerns:

22 inch Wide Air-Cooled Units

Ice machines come in three industry standard widths: 22 inch, 30 inch and 48 inch. The 30 inch models are the most popular. The 22 inch units are sold at a premium to the 30 inch units and produce roughly the same amount of ice. These units are designed to meet the space constraints that exist in beverage applications and down-sized restaurants which is a large growth segment of the food service industry. The compact design of the 22 inch air-cooled ice machines makes them inherently less energy efficient than comparable 30" wide units due to restricted air flow space. Only one in twelve (8%) of this type of air cooled machine currently offered meets the proposed regulation. We respectfully ask that the CEC consider either an exemption or a differing compliance requirement that would enable at least 20 to 25% of current ice machines in this category to meet the standard.

Remote Condensing Units

Remote condensing units (or split systems) have both the condenser and the compressor located outside the building space to eliminate the compressor noise. These units provide a number of benefits to consumers such as less noise and internal heat gain, improved ability to sanitize the dispenser (improves access to bin) and greater placement flexibility.

Sixty percent of large ice makers have remote condensers to remove the internal heat gain associated with the condenser heat rejection. This added benefit helps reduce the building cooling load. However, as currently proposed, the energy efficiency standard for air-cooled remote condensing units will eliminate all ice machines over 850 pounds capacities. Consequently, we ask that CEC look carefully at product availability and set the minimum energy standard at a level

where products are available over the entire range of capacities. We also request that CEC review its analysis and take into account the amount of energy savings resulting from lower cooling loads in the conditioned space where the ice machine is located.

Water-cooled ice machines

Water-cooled machines use water – instead of air – to dissipate the heat generated during ice making. They are the most efficient type of ice machine. No machines on the market over 1300 pounds per day meet the proposed energy regulation. This could create an adverse energy impact by shifting the market to less efficient air cooled units. We request that the CEC set minimum standards at a level where units are available over the full range of capacities, taking into account that water-cooled products are competing against air-cooled products.

Definitions

The regulation does not provide a definition for "commercial ice maker". It is not clear if the regulation includes flake ice machines, low capacity residential ice machines or large capacity industrial sized ice machines (none of which are rated by ARI). We recommend that language be added to the regulations to define commercial ice machines as machines that produce cube type ice with capacities between 50 and 2500 lbs per 24 hours when tested at ARI rating conditions. This language would exclude flakers, small residential ice machines and industrial ice makers from the regulation.

In addition, a definition for "maximum water use" should be added to clearly indicate that "water use" refers to the water used in the condenser.

Test Procedures

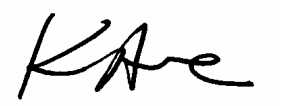
The proposed regulations make reference to ARI standard 810-2000 which has been replaced since 2003 by ARI 810-2003. We request that CEC adopt the 2003 issue of ARI standard 810.

Federal Preemption

We would like to remind CEC that all Title 20 regulations as they apply to "covered products" and "covered equipment" as defined by EPCA are expressly preempted by federal law. This was reinforced by the U.S. District Court for the Eastern District of California. However despite EPCA's express preemption and the Court's ruling, CEC is promulgating marking and information disclosure requirements for "covered products". The proposed amendments to Title 20 do not address these fundamental flaws and do not resolve the issue of federal preemption. We urge CEC to comply with the court's order.

We appreciate the opportunity to submit these comments. f you have any questions regarding this submission, please feel free to contact me.

Sincerely,



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